CLAIMS

1. An electrically conductive composition comprising a particulate silver compound and a reducing agent.

2. An electrically conductive composition according to claim 1, wherein the particulate silver compound comprises one type, or two or more types, of silver oxide, silver carbonate and silver acetate.

3. An electrically conductive composition according to claim 1, wherein the average particle diameter of the particulate silver compound is about 0.01-10 μm.

4. An electrically conductive composition according to claim 1, wherein the reducing agent comprises one type, or two or more types, of ethylene glycol, diethylene glycol, triethylene glycol and ethylene glycol diacetate.

5. An electrically conductive coating formation method comprising the step of coating the electrically conductive composition according to claim 1 followed by the step of heating the electrically conductive composition.

6. An electrically conductive coating obtained by coating the electrically conductive composition according to claim 1 followed by heating, wherein the particulate silver compound particles are mutually fused.

7. An electrically conductive coating obtained by coating the electrically conductive composition according to

claim 1 followed by heating, wherein the volume resistivity is about 3.0×10^{-6} to about 8.0×10^{-6} $\Omega \cdot cm$.

8. An electrically conductive coating obtained by coating the electrically conductive composition according to claim 1 followed by heating for about 30 minutes at about 150-200°C, which satisfies the following formula (1) when W represents the volume resistivity ($\Omega \cdot cm$) of the electrically conductive coating and X represents its specific gravity:

$$W \leq -1.72 \times 10^{-6} \times X + 2.3 \times 10^{-5} \quad (1).$$

9. An electrically conductive coating obtained by coating the electrically conductive composition according to claim 1 followed by heating for about 30 minutes at about 150-200°C, which satisfies the following formula (2) when Y represents the number of pores of about 100 nm or larger present in a surface area of about 10 μm x 10 μm on the uppermost surface of the electrically conductive coating, and Z represents the heating temperature (°C):

$$Y < -46.08 \cdot Z + 10112 \quad (2).$$

10. An electrically conductive composition according to claim 3, wherein the average particle diameter of the particulate silver compound is about 0.5 μm or less.

11. An electrically conductive composition according to claim 3, wherein the particulate silver compound is produced

by a liquid phase method in which silver oxide is obtained by reacting an aqueous alkaline solution with the product of the reaction between a silver compound and an aqueous silver nitrate solution.

12. An electrically conductive composition according to claim 11, wherein the particulate silver compound is produced by a liquid phase method and a dispersion stabilizer is added to the aqueous alkaline solution.

13. An electrically conductive composition according to claim 1, wherein a vapor phase method is used to obtain a particulate silver compound having an average particle diameter of about 0.1 μm or less by synthesizing silver oxide by heating a silver halide and oxygen in the vapor phase followed by thermal oxidation.

14. An electrically conductive composition according to claim 1, wherein the amount of reducing agent used is about 20 moles or less with respect to about 1 mole of particulate silver compound.

15. An electrically conductive composition according to claim 14, wherein the amount of reducing agent used is about 0.5-10 moles with respect to about 1 mole of particulate silver compound.

16. An electrically conductive composition according to claim 1, wherein a dispersion medium is used to disperse or

dissolve the particulate silver compound and reducing agent and obtain a liquid electrically conductive composition.

17. An electrically conductive composition according to claim 16, wherein an organic solvent or an alcohol is used as the dispersion medium.

18. An electrically conductive composition according to claim 1, wherein when the reducing agent is a liquid and the particulate silver compound is dispersed, the reducing agent also serves as a dispersion medium.

19. An electrically conductive composition according to claim 1, wherein secondary aggregation of the particulate silver composition is prevented by adding a dispersant.

20. An electrically conductive composition according to claim 19, wherein the dispersant is selected from the group consisting of hydroxypropyl cellulose, polyvinyl pyrrolidone and polyvinyl alcohol, and the amount of the dispersant used is about 0-300 parts by weight to about 100 parts by weight of particulate silver compound.

21. An electrically conductive composition according to claim 1, wherein the viscosity of the electrically conductive composition is about 30-300 poise.

22. An electrically conductive coating obtained by coating the electrically conductive composition according to claim 1 followed by heating, wherein the particulate silver

compound is reduced, and the reduced metallic silver particles form a continuous, metallic silver thin coating.